

This listing of claims will replace all prior versions of claims in the Application.

**Listing of Claims**

Claim 1. (Previously Presented) A method of providing a metal seed layer substantially free of discontinuities disposed on a substrate comprising the step of contacting a metal seed layer having discontinuities disposed on a substrate having one or more apertures having a size of  $\leq 1\mu\text{m}$  with an alkaline copper electroplating bath comprising copper pyrophosphate.

Claim 2. (Original) The method of claim 1 wherein the electroplating bath has a pH of from 8 to 9.

Claim 3. (Original) The method of claim 1 wherein the electroplating bath further comprises a complexing agent.

Claim 4. (Original) The method of claim 1 wherein the electroplating bath further comprises one or more bases selected from ammonium hydroxide or tetra(C<sub>1</sub>-C<sub>4</sub>)alkylammonium hydroxide.

Claim 5. (Original) The method of claim 1 wherein the electroplating bath further comprises one or more compounds selected from halides, brighteners, suppressors, levelers, grain refiners, wetting agents or surfactants.

Claim 6. (Previously Presented) A method of manufacturing an electronic device comprising the step of contacting a metal seed layer having discontinuities disposed on a substrate having one or more apertures having a size of  $\leq 1\mu\text{m}$  with an alkaline copper electroplating bath comprising copper pyrophosphate.

Claim 7. (Original) The method of claim 6 wherein the electroplating bath has a pH of from 8 to 9.

Claim 8. (Original) The method of claim 6 wherein the electroplating bath further comprises a complexing agent.

Claim 9. (Original) The method of claim 6 wherein the electroplating bath further comprises one or more bases selected from ammonium hydroxide or tetra(C<sub>1</sub>-C<sub>4</sub>)alkylammonium hydroxide.

Claim 10. (Original) The method of claim 6 wherein the electroplating bath further

comprises one or more brightener compounds in an amount of  $\geq 1.5$  mg/L.

Claim 11. (Previously Presented) An article of manufacture comprising an electronic device substrate containing one or more apertures having a size of  $\leq 1\mu\text{m}$ , each aperture containing a seed layer deposit enhanced by contact with an alkaline electroplating composition that comprises copper pyrophosphate.

Claim 12. (Original) A method for removing excess material from a semiconductor wafer containing one or more apertures by using a chemical mechanical planarization process which comprises contacting the semiconductor wafer with a rotating polishing pad thereby removing the excess material from the semiconductor wafer; wherein the apertures contain a seed layer deposit enhanced by contact with an alkaline electroplating composition that comprises copper pyrophosphate.

Claim 13. (Original) A method for removing excess material from a semiconductor wafer containing one or more apertures by using a chemical mechanical planarization process which comprises contacting the semiconductor wafer with a rotating polishing pad thereby removing the excess material from the semiconductor wafer; wherein the apertures contain a copper deposit obtained by contact with an alkaline electroplating composition that comprises copper pyrophosphate.

Claim 14. (Previously Presented) The method of claim 1 further comprising the step of subjecting the electroplating bath to sufficient current density to provide a metal seed layer substantially free of discontinuities.

Claim 15. (Previously Presented) The method of claim 6 further comprising the step of subjecting the electroplating bath to sufficient current density to provide a metal seed layer substantially free of discontinuities.

Claim 16. (Previously Presented) The method of claim 1 wherein the substrate is an integrated circuit device.

Claim 17. (Previously Presented) The method of claim 6 wherein the substrate is an integrated circuit device.

Claim 18. (New) A method of manufacturing an electronic device comprising the steps of contacting a metal seed layer having discontinuities disposed on a substrate having one or more

apertures having a size of  $\leq 1\mu\text{m}$  with an alkaline copper electroplating bath comprising copper pyrophosphate, subjecting the electroplating bath to sufficient current density to provide a metal seed layer substantially free of discontinuities and to substantially fill the apertures with copper.

Claim 19. (New) The method of claim 18 wherein the substrate is an integrated circuit device.

Claim 20. (New) the method of claim 18 wherein the electroplating bath has a pH of from 8 to 9.